

In the Claims:

Please add new claim 20 as follows:

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1. (Original) A disk device comprising:

a disk having predetermined information sectors recorded at a constant interval;

a head scanning said disk; and

a disturbance-compensation unit obtaining an amount of a disturbance based on a time-interval measurement in reading said predetermined information sectors so as to compensate a position of said head according to the amount of the disturbance.

2. (Original) The disk device as claimed in claim 1, wherein said disturbance-compensation unit compensates a tracking error signal according to the amount of the disturbance, the tracking error signal corresponding to a positional error of said head on said disk.

3. (Original) The disk device as claimed in claim 1, wherein said disturbance-compensation unit includes:

an angular-acceleration calculating unit calculating a rotational angular acceleration of a motor based on the time-interval measurement, the motor rotating said disk; and

a disturbance-compensation amount calculating unit calculating a disturbance-compensation amount based on said rotational angular acceleration so as to compensate the position of said head according to said disturbance-compensation amount.

4. (Original) The disk device as claimed in claim 3, wherein said disturbance-compensation unit further includes a filter filtering a value of said rotational angular acceleration including a vibration of the disturbance so as to supply said value to said disturbance-compensation amount calculating unit.

5. (Original) The disk device as claimed in claim 1, wherein said disturbance-compensation unit includes:

an angular-velocity calculating unit calculating a rotational angular velocity of a motor based on the time-interval measurement, the motor rotating said disk;

an angular-acceleration calculating unit calculating a rotational angular acceleration of said motor based on said rotational angular velocity; and

a disturbance-compensation amount calculating unit calculating a disturbance-compensation amount based on said rotational angular acceleration so as to compensate the position of said head according to said disturbance-compensation amount.

6. (Original) The disk device as claimed in claim 5, wherein said disturbance-compensation unit further includes a filter filtering a value of said rotational

angular velocity including a vibration of the disturbance so as to supply said value to said angular-acceleration calculating unit.

7. (Original) The disk device as claimed in claim 5, wherein said angular-acceleration calculating unit is composed of a differential filter.

8. (Original) The disk device as claimed in claim 1, wherein said disturbance-compensation unit includes a repeatable run-out amount obtaining unit obtaining a repeatable run-out amount of said head in relation to said disk so as to adjust the amount of the disturbance by the repeatable run-out amount.

9. (Original) The disk device as claimed in claim 8, wherein said repeatable run-out amount obtaining unit obtains said repeatable run-out amount by preliminarily detecting a deviation amount of said head affected by few disturbances, said head deviating from a track of said disk by the deviation amount.

10. (Original) The disk device as claimed in claim 8, wherein said repeatable run-out amount obtaining unit calculates an average of repeatable run-out amounts of said head measured at a plurality of points on said disk so as to adjust the amount of the disturbance by said average.

11. (Original) The disk device as claimed in claim 8, wherein said repeatable run-out amount obtaining unit divides said disk into a plurality of zones so as to obtain the repeatable run-out amount in each of said zones.

12. (Original) A disturbance compensation method for a disk device including a disk having predetermined information sectors recorded at a constant interval, and a head scanning said disk, the method comprising the steps of:

obtaining an amount of a disturbance based on a time-interval measurement in reading said predetermined information sectors; and

compensating a position of said head according to the amount of the disturbance.

13. (Original) The disturbance compensation method as claimed in claim 12, further comprising the step of compensating a tracking error signal according to the amount of the disturbance, the tracking error signal corresponding to a positional error of said head on said disk.

14. (Original) The disturbance compensation method as claimed in claim 12, further comprising the steps of:

calculating a rotational angular acceleration of a motor based on the time-interval measurement, the motor rotating said disk; and

calculating a disturbance-compensation amount based on said rotational angular acceleration so as to compensate the position of said head according to said disturbance-compensation amount.

15. (Original) The disturbance compensation method as claimed in claim 12, further comprising the steps of:

calculating a rotational angular velocity of a motor based on the time-interval measurement, the motor rotating said disk;

calculating a rotational angular acceleration of said motor based on said rotational angular velocity; and

calculating a disturbance-compensation amount based on said rotational angular acceleration so as to compensate the position of said head according to said disturbance-compensation amount.

16. (Original) The disturbance compensation method as claimed in claim 12, further comprising the steps of:

obtaining a repeatable run-out amount of said head in relation to said disk; and  
adjusting the amount of the disturbance by the repeatable run-out amount.

17. (Original) The disturbance compensation method as claimed in claim 16, further comprising the step of preliminarily detecting a deviation amount of said head

affected by few disturbances, said head deviating from a track of said disk by the deviation amount, so as to obtain said repeatable run-out amount.

18. (Original) The disturbance compensation method as claimed in claim 16, further comprising the step of calculating an average of repeatable run-out amounts of said head measured at a plurality of points on said disk so as to adjust the amount of the disturbance by said average.

19. (Original) The disturbance compensation method as claimed in claim 16, further comprising the step of dividing said disk into a plurality of zones so as to obtain the repeatable run-out amount in each of said zones.

20. (New) A disk device operable with a disk that is prerecorded with predetermined information at constant intervals, comprising:

a head configured to read information from the disk; and

a compensation unit configured to obtain an amount of disturbance based on time intervals of the predetermined information read by said head, and to compensate a position of said head based on the obtained amount of disturbance.

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